

AR53

**1969**  
**ANNUAL REPORT**

**AMP**

**INCORPORATED**

*Pamcor, Inc.*



THE COVER: AMP enters the Seventies facing an extremely broad range of electrical/electronic connection challenges—as indicated by the dramatic contrast between the tiny integrated circuit chip and the large power cable. The products shown are a few of the many recently developed by AMP—lead frames for fabrication of integrated circuit units and “packaging devices” for circuitry interconnection (foreground); multiple connectors for computers and aerospace (background left and right); and an AMPACT cable connector for electric utilities. Used in all types of present-day electrical/electronic equipment, AMP connection devices are also appearing in newly emerging items such as those shown on the back cover.



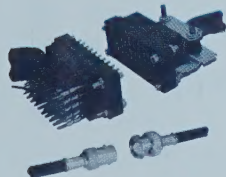


# Corporate Profile

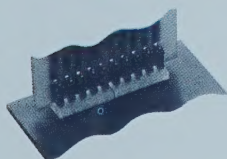
## PRODUCTS



Terminals & Splices



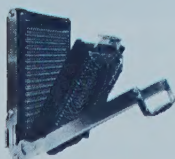
Connectors



Interconnection Systems



Tooling



Programming Systems



"Power Packages"

**GENERAL**—AMP Incorporated, founded in 1941, has its headquarters in Harrisburg, Pennsylvania. It has a Puerto Rican manufacturing affiliate, Pamcor, Inc., owned by identical shareholders. AMP now has 12 wholly owned subsidiaries: marketing companies in the United States and Canada; and manufacturing and sales subsidiaries in Mexico, Australia, Japan and seven European countries—France, Great Britain, Holland, Italy, West Germany, Spain and Sweden . . . . . 1

**HIGHLIGHTS AND PRESIDENT'S LETTER**—Sales up 26% to a record \$211 million; net income up 50% to a new high of \$24.3 million or \$1.98 per share . . . . . 2

**TEN YEAR SUMMARY AND FINANCIAL**—At December 31, 1969, assets of \$167.2 million, long-term debt of \$11.5 million and shareholders' equity of \$104 million . . . . . 4

**OPERATIONS**—The major portion of AMP's research, engineering and manufacturing facilities are within a fifty-mile radius of its General Offices at Harrisburg, Pennsylvania. Other operating facilities are located in North Carolina, Florida, and at the various subsidiary locations. Total employees 10,171 . . . . . 6

**MARKETS**—Throughout the world, AMP products are marketed directly to thousands of customers for use in the manufacture, maintenance and repair of the products and equipment of most industries. Over 50,000 customers in widely diversified electrical/electronic markets are served here and abroad . . . . . 7

**PRODUCTS**—AMP is a leading producer of solderless terminals, splices, multiple and coaxial connectors and other wiring devices, and the application tooling to pressure-crimp these devices to electric wires. It also produces patchcord and card programming systems, capacitor products, and other electronic components. There are over 30,000 types and sizes of AMP products . . . . . 18

**FINANCIAL STATEMENTS**—All statements and statistics, unless otherwise noted, include AMP Incorporated, its subsidiaries and, its affiliate, Pamcor, Inc. . . . . 24

**CORPORATE DATA** . . . . . 28

## MARKETS



Aerospace & Military Electronics



Commercial Electronics



Computer & Data Processing



Consumer Goods



Electrical & Transportation



Maintenance, Modernization Construction & Utilities



# Highlights

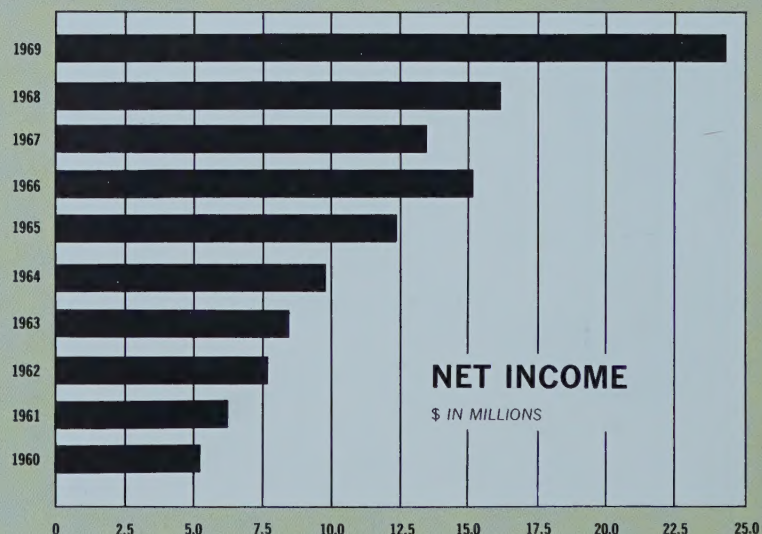
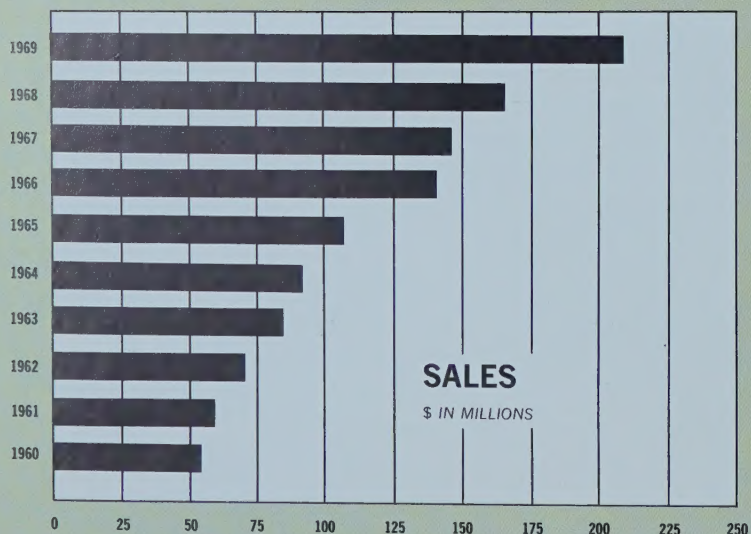
## FOR THE YEAR

	1969	1968	1967
Net sales . . . . .	\$211,256,000	\$167,172,000	\$146,469,000
Income before income taxes . . . . .	\$ 47,377,000	\$ 31,309,000	\$ 23,402,000*
Net income . . . . .	\$ 24,280,000	\$ 16,227,000	\$ 13,653,000*
Per share (Weighted Average) . . . . .	<b>\$1.98</b>	<b>\$1.33</b>	<b>\$1.12*</b>
Cash dividends . . . . .	\$ 5,875,000	\$ 4,887,000	\$ 4,391,000
Per share . . . . .	<b>48¢</b>	<b>40¢</b>	<b>36¢</b>
Capital expenditures . . . . .	\$ 17,562,000	\$ 8,465,000	\$ 15,977,000
Depreciation . . . . .	\$ 9,452,000	\$ 8,497,000	\$ 6,966,000

## AT DECEMBER 31

Backlog of unfilled orders . . . . .	\$ 41,100,000	\$ 34,500,000	\$ 29,000,000
Working capital . . . . .	\$ 65,823,000	\$ 56,390,000	\$ 46,022,000
Debt . . . . .	\$ 20,314,000	\$ 19,830,000	\$ 20,498,000
Shareholders' equity . . . . .	\$104,031,000	\$ 85,597,000	\$ 73,741,000
Shares of stock outstanding . . . . .	12,251,769	12,225,718	12,206,441
Number of employees . . . . .	10,171	8,785	8,260

\* After a special nonrecurring loss on devaluation of foreign assets of \$481,000 or 4¢ per share.







U. A. Whitaker, Chairman (left); G. A. Ingalls, Vice Chairman (center); and S. S. Auchincloss, President (right).

## To the Shareholders

1969 was a year of extraordinary growth for AMP. The 26% rise in sales, itself quite notable, represents an increase in sales volume of over \$44 million—almost equal to the entire sales for the year 1959. The far greater 50% rise in net income reflects the unexpectedly high rate of sales growth and the cautious restraint used in initiating similarly high increases in expenditures in the climate of economic uncertainty that has prevailed for some time. In the latter part of 1969, the continued build-up in our facilities and capabilities, particularly in the technical and service areas of the company, brought profit margins down to more normal levels. In 1970 the higher levels of expenditures should be partially offset by the reduction and eventual expiration of the U. S. surtax.

The backlog of unfilled orders also rose sharply from the record \$34.5 million at the beginning of 1969 to a substantially higher record of \$41.1 million at year end.

Geographically our growth was especially well diversified with good gains domestically, which still accounts for some 60% of our business, as well as in the faster-growing international segment where we realized very good gains in both the European and Far Eastern areas. As to market categories, the best gains domestically and internationally were in the large computer and data processing markets as well as the commercial and industrial electronics markets. We also had good growth in the consumer goods industries and electrical and transportation equipment markets.

Organizationally in 1969, Mr. F. S. Kugle, formerly Controller, was elected Vice President, Administration. Mr. Clyde Rayburn, formerly Assistant Controller, was elected Controller.

In 1959, we entered the decade of the Sixties with 3,835 employees and \$16 million of shareholders' equity. In the last ten years sales grew over four times larger

from \$47 million to \$211 million and we enter the 1970's with over 10,000 employees and more than \$100 million of shareholders' equity. Throughout this growth AMP has relied on new products and markets and emphasized research, development and engineering. In 1969 these expenditures continued at 10% of sales and amounted to over \$21 million—up from \$17 million in 1968. During 1969 we again broadened our array of terminals, connectors, and interconnection devices and continued to extend our capabilities into related fields such as lead frames, switches, and input/output information units. We also focused attention on several markets relatively new to AMP such as gas utilities, telephone equipment manufacturers and the U. S. automotive industry.

It would be overly optimistic to assess our future potential in terms of 1969's extraordinary growth, rather than our average historical performance over the longer term. However, we think the future is as promising as ever and look to the Seventies with optimism. Although there is much uncertainty about the U. S. economic outlook, we expect to attain a good rate of growth in 1970.

We again thank our employees, customers and vendors for 1969, a year that gave us a dramatic conclusion to the Sixties and good momentum for the Seventies.

Sincerely,

U. A. Whitaker  
*Chairman of the Board*

S. S. Auchincloss  
*President and  
Chief Executive Officer*

February 27, 1970  
Harrisburg, Pa.



# Ten Year Summary of Financial Data

(Dollars in thousands)

	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960
<i>For The Year—</i>										
NET SALES	\$211,256	\$167,172	\$146,469	\$141,817	\$110,942	\$91,676	\$82,835	\$73,233	\$61,163	\$55,158
COST OF SALES	116,516	95,612	85,813	81,072	62,000	50,322	45,987	39,245	33,130	30,356
GROSS INCOME	94,740	71,560	60,656	60,745	48,942	41,354	36,848	33,988	28,033	24,802
SELLING & GENERAL, ETC. (1)	47,363	40,251	37,254	33,281	26,426	22,586	20,796	18,743	15,773	14,024
INCOME BEFORE INCOME TAXES	47,377	31,309	23,402	27,464	22,516	18,768	16,052	15,245	12,260	10,778
INCOME TAXES	23,097	15,082	9,749	12,439	10,068	9,045	7,510	7,471	5,605	4,965
NET INCOME	<u>\$ 24,280</u>	<u>\$ 16,227</u>	<u>\$ 13,653</u>	<u>\$ 15,025</u>	<u>\$ 12,448</u>	<u>\$ 9,723</u>	<u>\$ 8,542</u>	<u>\$ 7,774</u>	<u>\$ 6,655</u>	<u>\$ 5,813</u>
Per Share (2)	\$ 1.98	\$ 1.33	\$ 1.12	\$ 1.23	\$ 1.02	80¢	70¢	64¢	55¢	48¢
<i>CASH DIVIDENDS</i>	\$ 5,875	\$ 4,887	\$ 4,391	\$ 3,652	\$ 3,037	\$ 2,729	\$ 2,423	\$ 2,119	\$ 1,816	\$ 1,614
Per Share (2)	48¢	40¢	36¢	30¢	25¢	22¢	20¢	17¢	15¢	13¢
CAPITAL EXPENDITURES	\$ 17,562	\$ 8,465	\$ 15,977	\$ 17,136	\$ 11,817	\$ 6,195	\$ 7,891	\$ 5,141	\$ 3,507	\$ 4,524
DEPRECIATION	\$ 9,452	\$ 8,497	\$ 6,966	\$ 5,609	\$ 4,178	\$ 3,615	\$ 3,070	\$ 2,696	\$ 2,201	\$ 1,779
<i>At December 31—</i>										
WORKING CAPITAL	\$ 65,823	\$ 56,390	\$ 46,022	\$ 35,257	\$ 28,645	\$26,513	\$21,645	\$19,398	\$16,019	\$12,349
PROPERTY, PLANT AND EQUIPMENT, NET	\$ 53,379	\$ 46,086	\$ 47,068	\$ 38,713	\$ 27,543	\$20,125	\$17,839	\$13,165	\$10,927	\$ 9,757
LONG-TERM DEBT	\$ 11,537	\$ 13,535	\$ 15,534	\$ 6,200	\$ 400	\$ 500	\$ 600	\$ 700	\$ 800	\$ 900
SHAREHOLDERS' EQUITY	\$104,031	\$ 85,597	\$ 73,741	\$ 64,283	\$ 53,026	\$43,671	\$36,660	\$30,501	\$24,921	\$20,080

(1) The loss of \$481,000 (4¢ per share) on devaluation of foreign assets in 1967, previously reported as a separate item before net income, has been included in Selling & General, etc.

(2) Based on the weighted average number of shares outstanding during the respective years after retroactively giving effect to the 2-for-1 stock split in 1967 and the 3-for-1 stock split in 1961.



# Financial

**AMP'S FINANCIAL POSITION** strengthened again in 1969 notwithstanding the financial demands created by the extraordinary sales growth of 26% to a record \$211 million. Our improved position was primarily due to the even greater increase of 50% in net income to \$24 million, which in turn was due to the exceptional sales growth and a general lag in increasing expenditures to levels commensurate with the higher level of operations.

This sales growth, along with higher material and labor costs and the tight money situation, necessitated maintaining higher levels of inventories and receivables.

Shareholders' equity, now more than \$104 million, increased 22% during 1969, through reinvestment of \$18.4 million of earnings to finance future growth.

Working capital at \$65.8 million is again substantially higher than the previous year. The ratio of current assets to current liabilities continued strong at 2.4 to 1, down only moderately from 2.8 to 1 at year-end 1968.

Total short- and long-term debt rose from \$19.8 million to \$20.3 million and is now equivalent to only 20% of shareholders' equity, down from 23% at year-end 1968. The "net debt-cash" position also improved slightly and no equity financing or new domestic debt is anticipated.

AMP's subsidiaries have, for some time, confined their local currency positions to required operating levels only. During 1969 the 11% devaluation of the French franc and the 9% upward revaluation of the German mark, together with the losses and gains on various currency "hedges", had no material effect on the Combined Financial Statements.

**CAPITAL EXPENDITURES** were a record \$17.6 million, just above the previous record of \$17.1 million, and more than twice the \$8.5 million spent in 1968. For further discussion see Operations.

**INCOME TAXES**—Our effective tax rate did not change significantly from that experienced in 1968

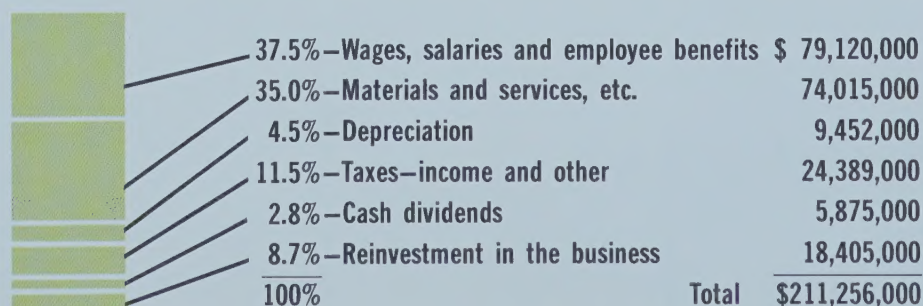
as both years included the 10% U.S. Federal surtax, which in 1969 accounted for approximately \$1.5 million or 12¢ per share. In 1970, this segment of our tax should be decreased proportionately with the reduction of this surtax from 10% to an effective rate of 2½% for the year. The elimination of the Investment Tax Credit did not have a significant effect on AMP's net income because the tax credits are apportioned over the life of the equipment for which they were granted.

**DIVIDENDS**—The quarterly cash dividend of 14½¢ per AMP Endorsed Share payable March 2, 1970 to shareholders of record on February 9, 1970, indicates an annual rate of 58¢ per share or 21% above the 48¢ per share paid during 1969. This is the twelfth consecutive annual increase of more than 10% and the seventeenth consecutive annual increase.

**THE SOURCE AND APPLICATION OF FUNDS** statement below provides a brief comparison of our financial activity for 1969 and 1968.

	1969	1968
	(in thousands)	
FUNDS WERE PROVIDED FROM—		
Net Income . . . . .	\$24,280	\$16,227
Expenses not requiring current outlay of funds:		
Depreciation . . . . .	9,452	8,497
Deferred income taxes . . . . .	(82)	(104)
Others . . . . .	926	659
Miscellaneous sources, net. . . . .	292	440
	<u>\$34,868</u>	<u>\$25,719</u>
AND WERE USED TO—		
Increase working capital . . . . .	\$ 9,433	\$10,368
Acquire plant and equipment . . . . .	17,562	8,465
Decrease long-term debt . . . . .	1,998	1,999
Pay dividends to shareholders . . . . .	5,875	4,887
	<u>\$34,868</u>	<u>\$25,719</u>

## How the 1969 Sales Dollars were used





# Operations

Well over a thousand people joined AMP during 1969 to raise our worldwide employment to more than 10,000. This was part of a broad program to meet the exceptional present operational demands while preparing for further growth in the Seventies. Both here in the U.S. and in other countries we added personnel in all areas of the company—production, technical, marketing, and administrative—to give a dramatic boost to our capabilities for handling future growth.

Over the long term, AMP's sales have been doubling approximately every five years—equivalent to an average growth of about 15% per year. However, the number of employees needed to achieve this growth has risen at only about half this rate, principally because of our strong emphasis on automated production. As labor costs steadily rise, our long experience with automated production techniques should serve us well in the Seventies. We expect to add many more numerically controlled machine tools in the coming years, and to continue to create special high-speed, automated operations for the forming, plating, and assembly of metal and plastic parts—parts which are often minute, intricate, delicate and usually produced in the millions.

## **BUILDING FOR THE SEVENTIES:**

**Right**—Expansion of headquarters building of the marketing subsidiary at Valley Forge, Pa.

**Below**—Recently completed second plant of AMP Japan near Tokyo.

The record capital expenditures of \$17.6 million in 1969 were divided somewhat equally between the three categories of land and buildings, operating equipment, and application equipment loaned to customers. Intensive use of facilities enabled us to accomplish the exceptionally high 26% sales growth in 1969 with a modest 11% expansion in floor space. The largest facility added was a second manufacturing plant in Japan. Our floor area now totals over 2.6 million square feet. 1970 and 1971 should see substantial physical expansion in the U.S. in Pennsylvania and North Carolina, as well as in Italy, Sweden, West Germany, and several other countries. We are in various stages of projects which will add manufacturing capacity, increase our marketing facilities, add administrative and engineering space, and enlarge our corporate research operation. With this activity underway, it is likely that 1970 capital expenditures will equal or exceed 1969's record total.





# Marketing and Markets

Aerospace and Military Electronics • Commercial and Industrial Electronics • Computer and Data Processing • Consumer Goods • Electrical and Transportation Equipment • Maintenance, Modernization, Construction, Utilities

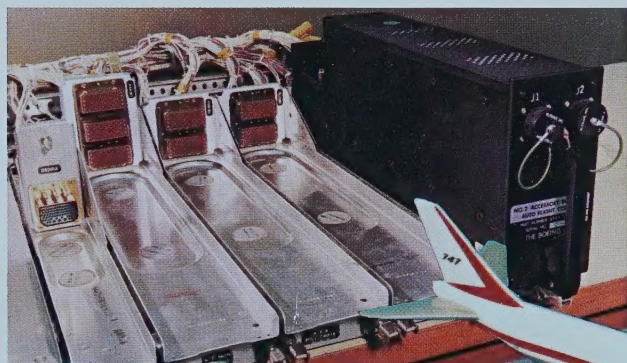
To meet the rising need for electrical and electronic connection devices, our sales and field service forces were substantially expanded in 1969 and now number over 400 in the U.S. alone. Through two separate marketing organizations, thousands of original equipment manufacturers and tens of thousands of maintenance and repair, construction, and utility customers around the world are provided with the same high-quality products. Using the latest marketing tools and techniques, this two-pronged, direct selling approach should keep us fully responsive to the challenges of our markets in the 1970's.



## AEROSPACE AND MILITARY ELECTRONICS

Commercial Aircraft • Business and Private Aircraft • Air Traffic Controls • Avionics • Military Communications • Missiles • Defense Systems • Space Vehicles • Ground Support Equipment • Oceanography

The "Wide-Bodied Jets" of the Seventies such as the Boeing 747, the McDonnell Douglas DC-10 and the Lockheed Tri-Star 1011, will use a variety of AMP products, some of which are shown in the **picture below**. From left to right are coaxial cable connectors, printed circuit connectors, ARINC-type pin and socket connectors, terminal junction block systems, and terminals and splices. The **picture at left** shows one use of our ARINC-type connectors—in the avionic equipment rack of the 747. We are intensifying our efforts to develop new connection products and application tooling for the wiring systems and avionic equipment that the airframe companies, airlines, and military will be using in the Seventies.







## COMMERCIAL AND INDUSTRIAL ELECTRONICS

*Credit Systems • Business Machines • Quotation Systems • Communications • Numerical Controls • Production Control Systems • Process Controls • Instrumentation • Test Equipment • Medical Equipment • Educational Equipment • Security Systems.*

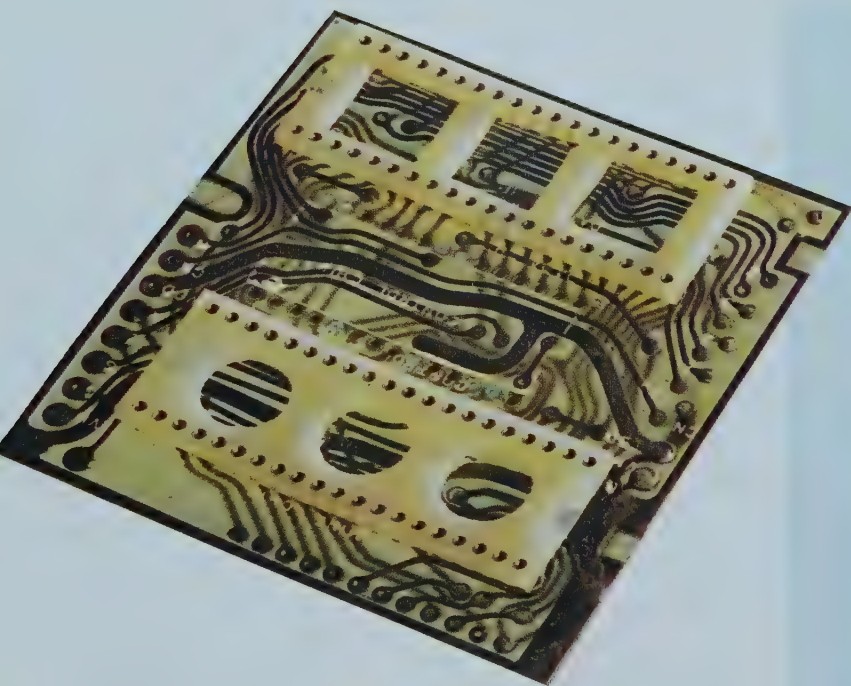
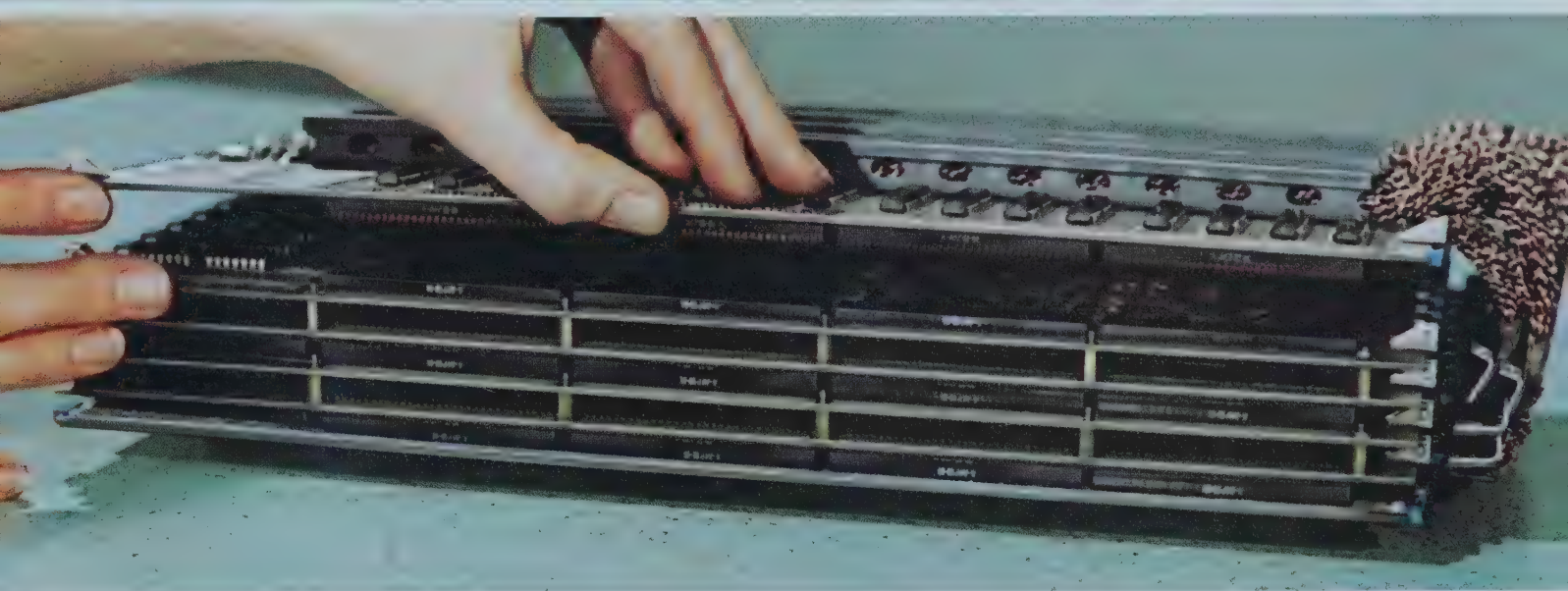
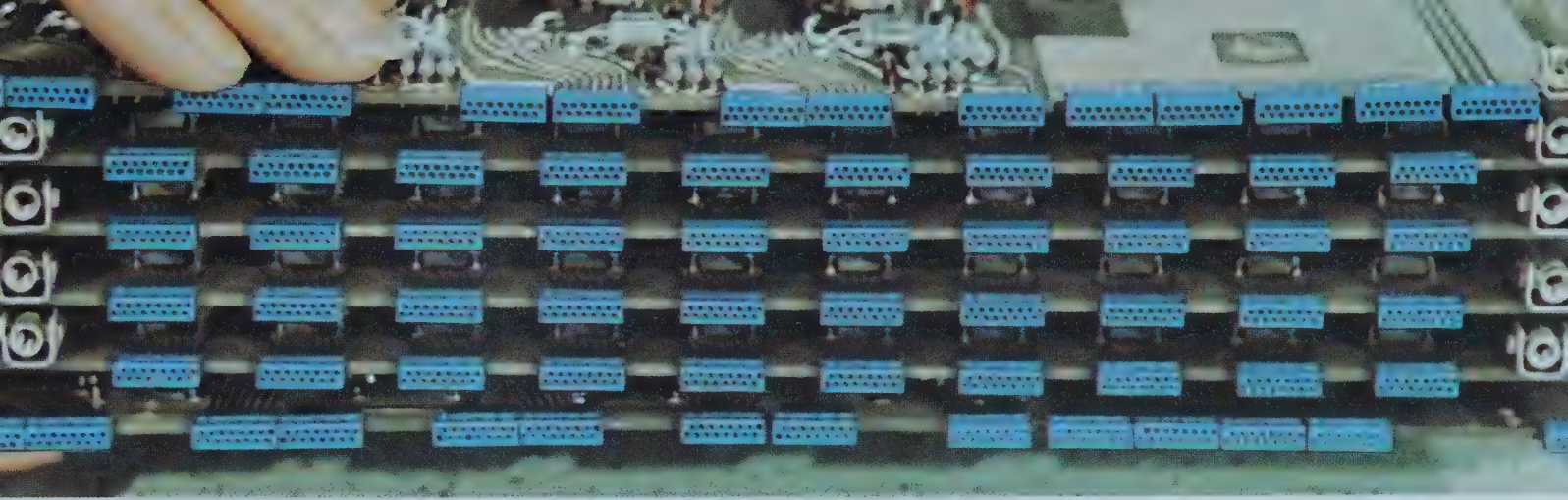
In the **top picture** at right, the AMP microminiature connectors on the edge of each Ferroxcube memory plane permit easy connection and disconnection of input/output wires previously soldered in place. In the **middle picture**, mating AMP microminiature connectors on the upper and lower surfaces of each plane allow quick installation and removal of individual planes for modification or maintenance of the memory stack.

The **bottom pictures** show a Canon calculator and newly-developed AMP socket wafers. With these 40-position receptacles, large-scale integrated circuitry units are quickly and reliably attached onto printed circuit boards in production, but can be unplugged for later servicing. Most calculators, whether produced in Japan, Europe or the U.S., use our connection products—such as terminals and splices, multiple connectors, and various electronic packaging devices.



Electronic calculator manufacturers and thousands of other customers are kept informed of the latest AMP products through an expanding direct mail and advertising program. Bulletins, handbooks, technical papers presented to professional societies, reprints of magazine articles and other types of literature, as well as an extensive trade and general advertising program, will help us to continue reaching many thousands of customer engineering and purchasing personnel.





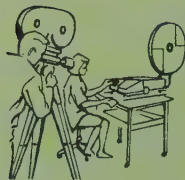




## COMPUTERS AND DATA PROCESSING

*Digital Computers • Analog Computers • Hybrid Computers • Data Entry Equipment • Printers • Data Converters • Visual Displays • Input/Output Terminals • Time-Sharing Equipment.*

AMP products have been used extensively in the computer industry since its inception in the 1950's. Each new generation of equipment calls for the development of additional connection products. In recent years, for example, the growing use of integrated circuitry has required new electronic packaging and connection devices. **At right** is a System 21 data input terminal and computer produced by Viatron Computer Systems Corporation. It uses a number of our established products and is also one of the first applications of a new type of AMP socket receptacle contact. These new contacts can be arrayed in a circuit board in the exact configuration needed to provide pluggability for Viatron's fourth generation large-scale integrated circuitry units, and can facilitate later circuitry changes if required.



AMP serves most of the computer and peripheral equipment manufacturers in the Free World. To better describe the products and application tooling available, we recently completed a motion picture about our capabilities in this dynamic growth market. This new film joins a number of other AMP movies used for seminars, conferences, trade shows, customer visits and similar purposes.









## CONSUMER GOODS

TV • Radio • Stereo • Tape Recorders • Organs • Washers • Dryers • Dishwashers • Refrigerators • Freezers • Air Conditioners • Humidity Controls • Portable Heaters • Small Appliances • Power Tools • Garden Equipment • Vending and Amusement Equipment.

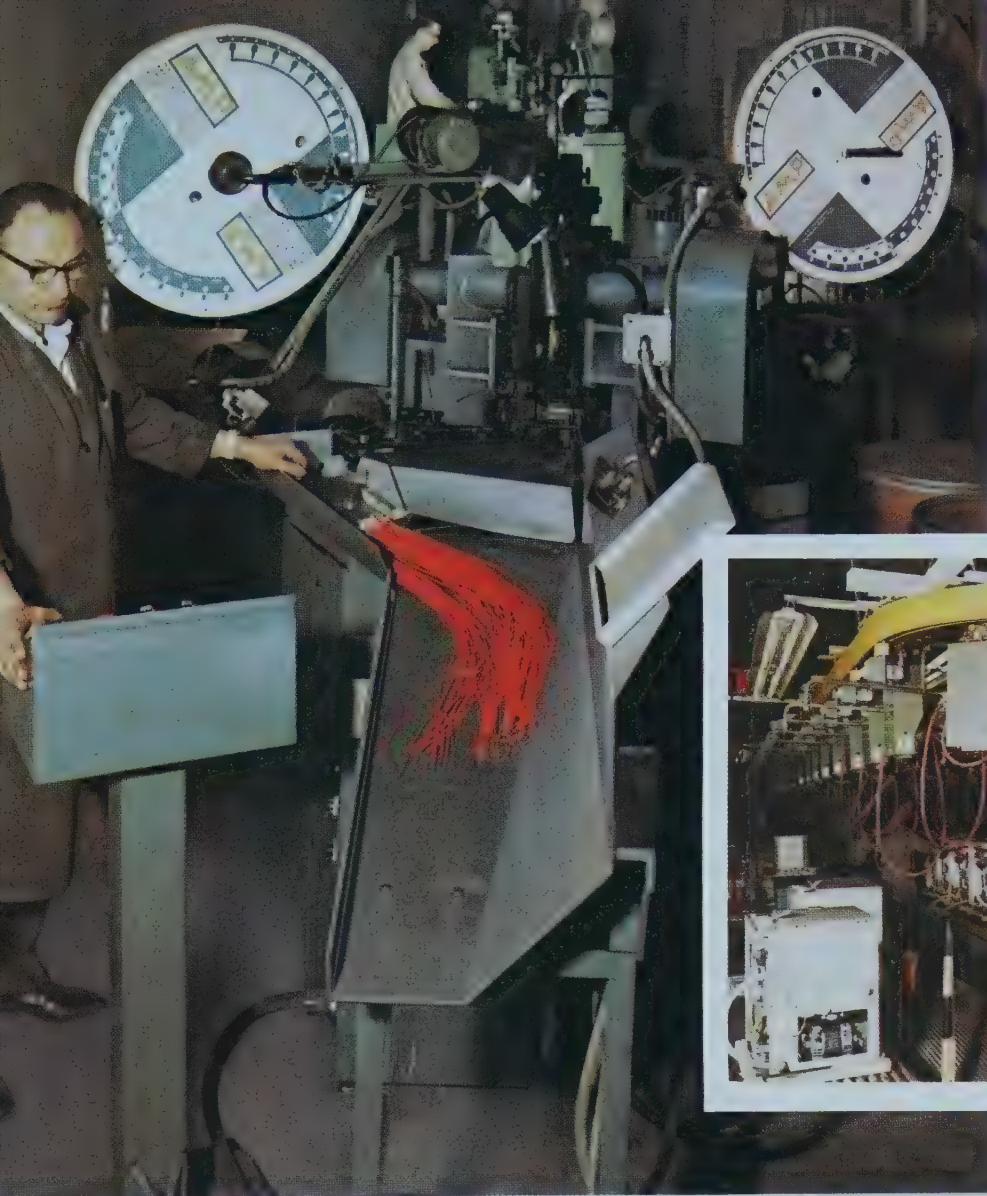
The consumer goods industry is probably as competitive and cost conscious as any of the many markets we serve. Our emphasis on **ECONOMATION**, or installed cost savings through automation, has received broad acceptance from these manufacturers. Thousands of our semiautomatic bench machines and fully automatic floor machines are used in these industries to obtain labor savings while assuring uniform quality connections.

The **pictures at right** show fully automatic AMPOMATOR machines at work at Siemens in West Germany (**top**) and at Garrard in Great Britain (**bottom**). As West Germany's largest producer of appliances, TV and other home entertainment equipment, Siemens uses a wide range of our terminals, splices and connectors. The scenes shown here depict washing machine production. The world-famous Garrard record players rely on AMP-LOK multiple connectors for the vital connections between the turntable unit and the amplifier.

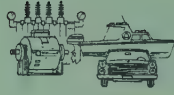


Our **ECONOMATION** marketing program relies on many support activities in addition to close customer liaison by our sales engineers and expert installation and maintenance by our field service engineers. For example, training of AMP and customer personnel is becoming increasingly important and will be augmented by television equipment, including a special studio, recently installed for the production of video tape programs for training and communications purposes in the Seventies.







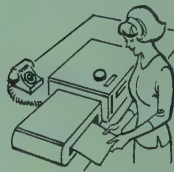


## TRANSPORTATION AND ELECTRICAL EQUIPMENT

*Motors and Generators • Compressors • Refrigeration, Heating and Air Conditioning Equipment • Lighting Equipment • Transformers • Coils and Relays • Automobiles • Trucks • Busses • Rail and Rapid Transit Equipment • Farm Equipment • Materials Handling Equipment.*

In the automotive industry the design of new electronic systems for comfort, safety, emission control and performance is generating many opportunities to propose new types of connection and switching devices to manufacturers. We have been a major supplier to European and Japanese car producers since the 1950's. In the mid-Sixties we began concentrating on the U. S. market by emphasizing the development of connection products for specific automotive needs. With our products now in cars of each of the "Big Three" U. S. manufacturers, and many proposals under evaluation, this promises to be a good growth market for us in the Seventies.

The **top picture** at right shows the Single End Leadmaking Machine, one of our newest machines, on display at our exhibit at the recent Society of Automotive Engineers trade show in Detroit. The **lower left picture** shows our printed circuit connectors used on electronic "black boxes" for anti-skid control and fuel level indication. The remaining pictures are exhibit panels depicting AMP products sold or proposed for use in the automotive industry.



Effective product development demands close coordination between customer engineers and our marketing and engineering representatives. To facilitate this process for this particular market, we recently opened a District Sales Office in Detroit and will be installing a facsimile transmission system between that office and our engineering staff in Harrisburg.





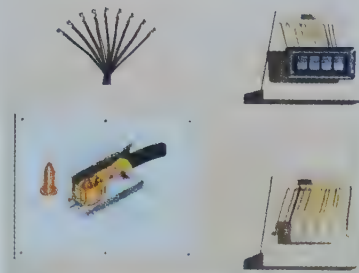
**AMP GROUNDING TERMINALS  
AND LAMP CONTACTS**



**AMP SEALED MOTOR CONNECTOR**



**AMP POWER WINDOW CONNECTOR**

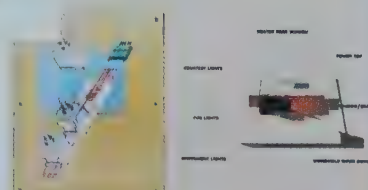


**AMP ANTI-SKID CONTROL  
CONNECTOR**

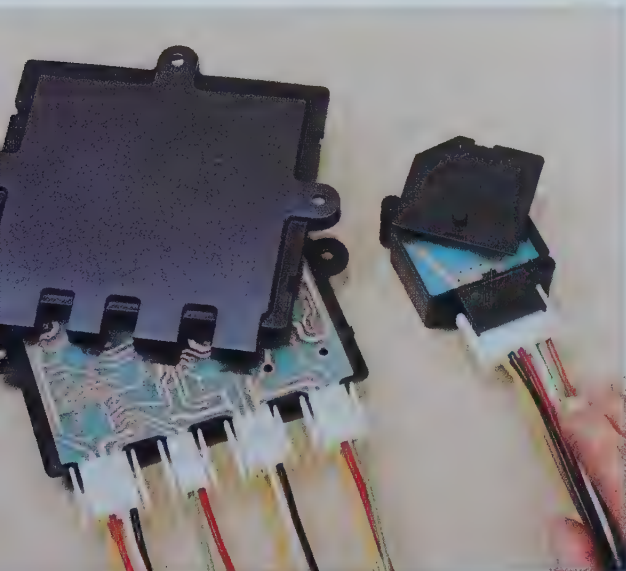


**RUGGED CONTACT CONSTRUCTION**  
CURRENT RANGE 10 MILLI-AMPS - 30 AMPS  
ACCEPTS .010 PRINTED CIRCUIT  
BOARD VARIATION  
POSITIVE LOCK

**AMP PRINTED CIRCUIT  
TOGGLE SWITCH**



**LOW COST**  
CIRCUIT SIMPLICITY  
HIGH RELIABILITY  
CURRENT RANGE 2 TO 30 AMPS





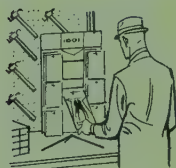


## MAINTENANCE & REPAIR, CONSTRUCTION, UTILITIES

*Airlines • Bus Lines • Trucking Companies • Railroads • Shipyards • Industrial Plant Maintenance • Repair Shops • Contractors • Federal, State & Local Government • Electric Power Companies • Telephone Companies • CATV • Gas Companies • Resale Organizations*

The **top pictures** at right show a gas lantern installation in Philadelphia using AMP-FIT tube and pipe fittings and application tools. The AMP approach is finding good acceptance among gas utilities since it not only lowers the initial purchase cost, but also provides uniformly reliable applications with a substantial savings in labor. For example, 15 minutes can be saved in installing a gas lantern, grill, heater or other outdoor fixture. Recently we introduced larger size fittings for distribution pipe up to 1½" diameter which are receiving good initial response from gas utilities.

The **bottom picture** at right shows our PICABOND MA-8 reeled tool in use at the New Jersey Bell Telephone Company. The thousands of wires in a typical telephone cable can be joined quickly and reliably with PICABOND preinsulated, splicing connectors. Since its introduction in the mid-Sixties, this method has been gaining increasing acceptance among the independent telephone companies and more recently, by a number of Bell System operating companies.



During the past year, we also strengthened our position in the maintenance and repair and retail markets in both the U.S. and in other countries through the separate AMPLIVERSAL divisions. For instance, resale packaging of AMP products and tools for major retailers is making good progress. We have begun supplying custom-designed retail display stands, along with packages of terminals and tools, to several retail organizations including the American Hardware Supply Company with some 1300 member stores.







## Product Review

1969 was a fitting end to a very fruitful decade of development work in which AMP's product horizons broadened considerably. We entered this last decade with one of the broadest arrays of terminals and splices available from a single source. In the last ten years, we went far beyond this in adding pin and socket connectors, coaxial cable connectors, printed circuit edge connectors, packaging devices and interconnection systems, point-to-point wiring systems, card readers, switches, and mechanical connectors.

During that decade we also developed the special connectors necessary to enter new markets such as power utilities, telephone operating companies, CATV systems, and the domestic automotive industry. Technological changes in circuitry, conductors, and customer equipment, as well as the increasing need for modularization and mechanization, have created many opportunities for development of new electrical connection devices. We will continue to take advantage of this evolutionary process of growth in the 1970's—broadening both within the connection field and into related areas. For example, we can at this juncture, point to the beginnings of several entirely new product areas we are exploring such as power distribution systems, lead frames for integrated circuit chips, connectors for telephone equipment, fittings for gas distribution pipe, input/output terminal units for data systems, and alphanumeric light display modules for electronic panels.

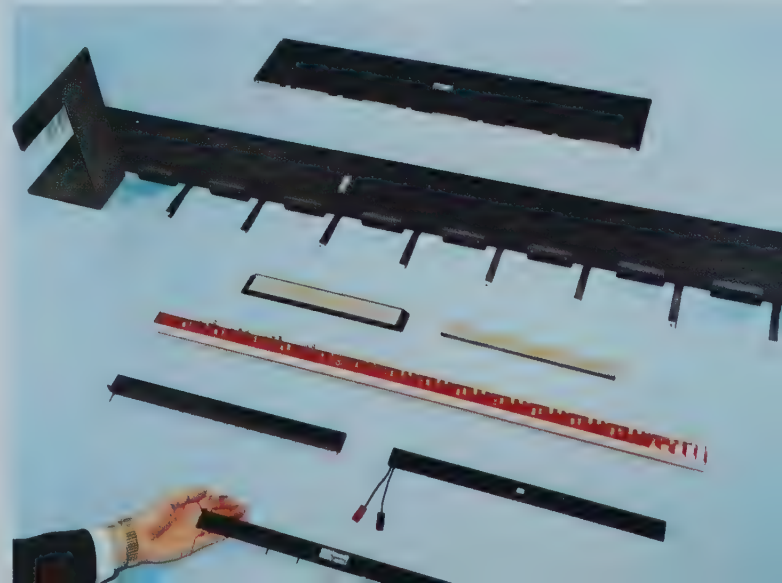
We plan to continue to spend 10%–12% of our sales dollar on research, development and engineering. In 1969 we spent over \$21 million on the creation and application of new and improved products and processes. Patents, one indication of creativity, continue to increase. At year-end 1969, over 1,350 U.S. and 8,500 corresponding patents in other countries were issued or pending—a total of nearly 10,000 compared to less than 2,000 ten years ago.

The much broader scope of our current new product work becomes increasingly difficult to describe in detail and, consequently, the new products pictured here represent only a cross section of our engineering results during 1969. In many of the categories below, the application tooling, while not shown or described, is usually an essential part of these development programs.

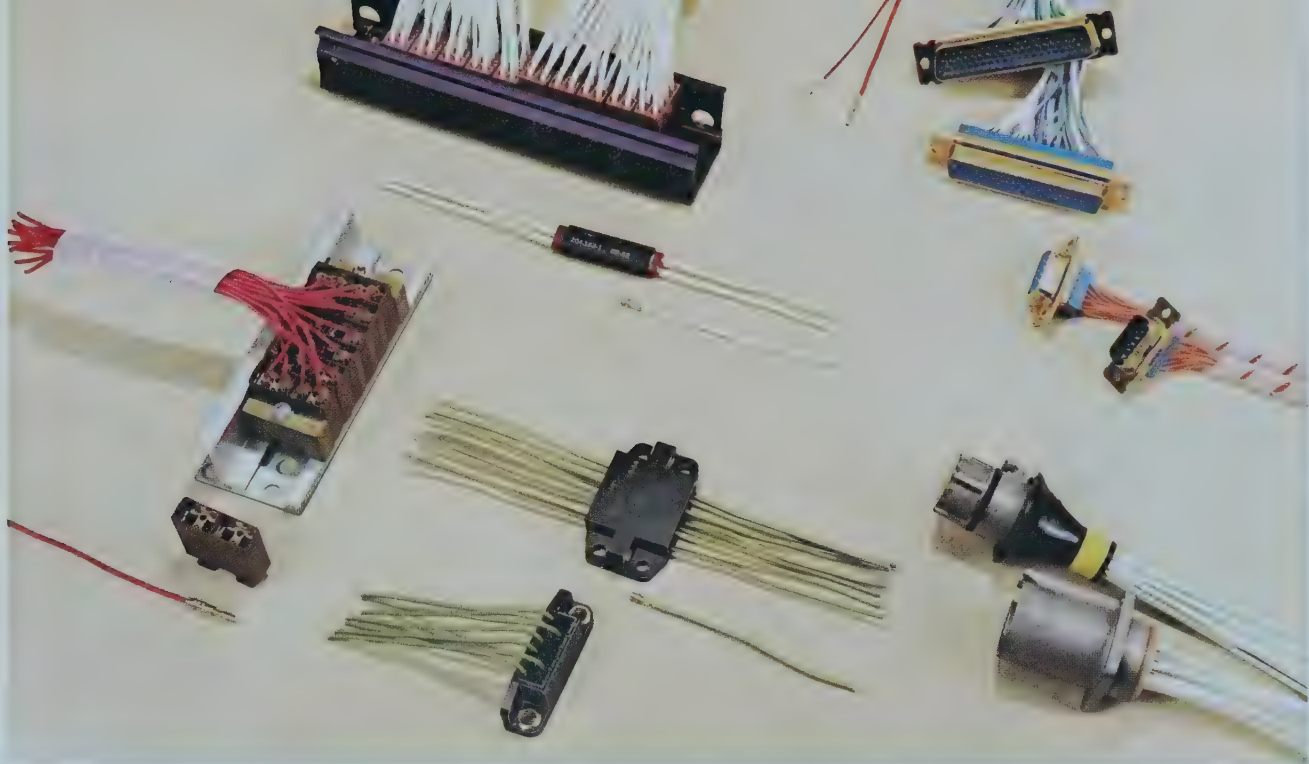
### **Terminals, splices, bus bars, special connections:**

**The power distribution devices shown below,** although greatly disparate in size, are all members of a new family of custom-designed, laminated bus bars for high performance power distribution within electronic equipment. This new product family, like many other developments, grew out of our unique capabilities in insulation and connection materials and techniques.

Although thousands of terminals and splices developed during the past twenty to twenty-five years continue with even greater usage than ever before, later versions must be continually developed. Newer types of conductors, such as small thin-wall insulation wire and improved aluminum alloy cable for aircraft, require new connection devices and mating tools when existing products cannot be adapted. Environmental considerations, space and weight requirements, and the utilization of labor-saving application equipment also led to a number of product additions in this area in 1969.







### Multiple Connectors:

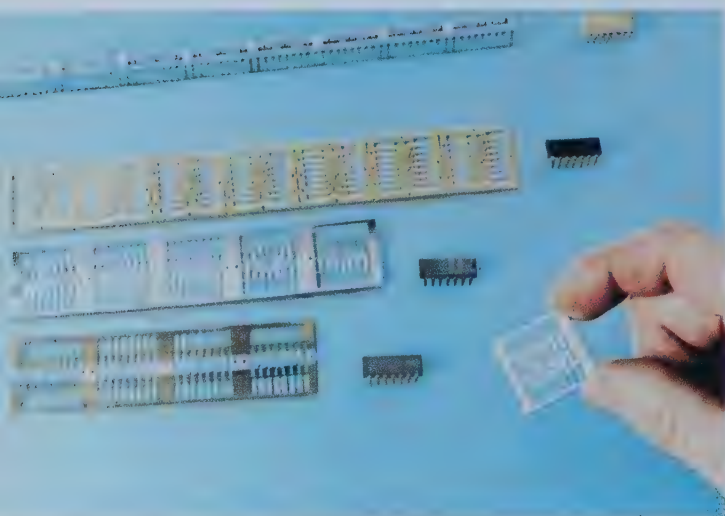
The new connectors shown above, designed primarily for aerospace applications, reflect several trends. *At left*, compact, sealed terminal junction block systems which reliably common many wires in a small space; *at right*, a plastic housing circular connector developed for economical general purpose uses; and *rear*, High Density "D" Series connectors that meet high density wiring requirements within electronic equipment. Other new multiple connectors include versatile, low-cost pin and socket connectors for consumer goods, office machines, and electrical equipment, as well as customized, hermetically sealed

connectors for high voltage connections to electronic equipment.

The flexible circuitry connectors shown below, can be provided by AMP in various types and sizes to meet a wide range of customer circuitry requirements such as the three configurations in the center of the picture. This capability should become an increasingly important complement to the growing family of connectors and application tooling we provide customers for use on related flexible flat cable. Two of the newest cable connectors are shown at the top and bottom of the picture.



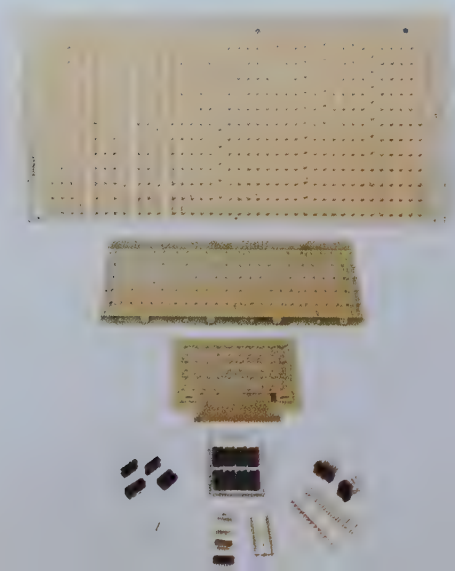




### Packaging Devices and Point-to-Point Wiring Systems:

The lead frames shown above are continuous-strip, one-piece frames for the fabrication of ceramic or plastic encapsulated dual-inline integrated circuit units. They are only a few of the many configurations we can provide to semiconductor manufacturers for various types of circuitry such as transistors and diodes, as well as integrated circuitry units. This new product area makes good use of our established skills in precision metalworking, metal plating, and metal cladding. The intricate shapes are formed at high speeds in progressive dies from metal strip that in many cases is only a few thousandths of an inch thick. To provide high performance connections, the metal is clad or plated either entirely or in the specific areas where the circuitry chip is to be attached by the customer.

The panel boards and various packaging devices for integrated circuitry shown below indicate a significant



broadening of our capabilities in this fast-growing area of electronics. We can provide a customer with the panels in which precisely located holes have been drilled and "through-plated" together with all the proper connection devices for his assembly. However, we can also insert the AMP devices and deliver the assembled panels ready for customer wiring with equipment we provide.



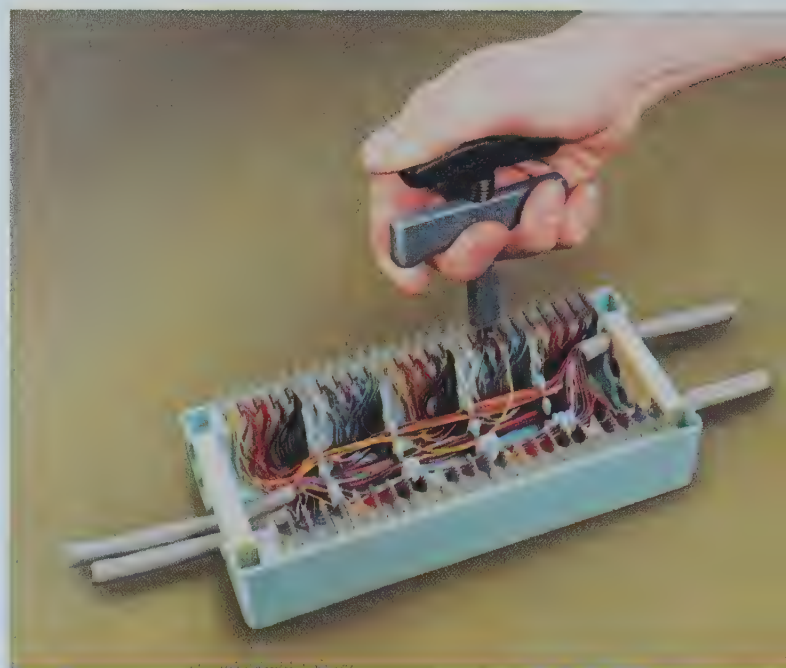
Finally, going one step further, we can utilize our in-plant TERMI-POINT wiring facilities to deliver completely wired and tested panels ready for installation in the customer's equipment. Above, a **TERMI-POINT machine** is wiring panels for the Packard Instrument Company. These unique large panels contain several thousand wires and are delivered ready to accept pluggable units of integrated circuitry. Provision can be made for various panel "takeoff" devices such as edge connectors and cable assemblies. Considering the wide range of AMP interconnection, packaging and takeoff devices available and the in-plant panel making, assembly, and wiring services offered, we believe our capabilities in this area are broader than any other single supplier.





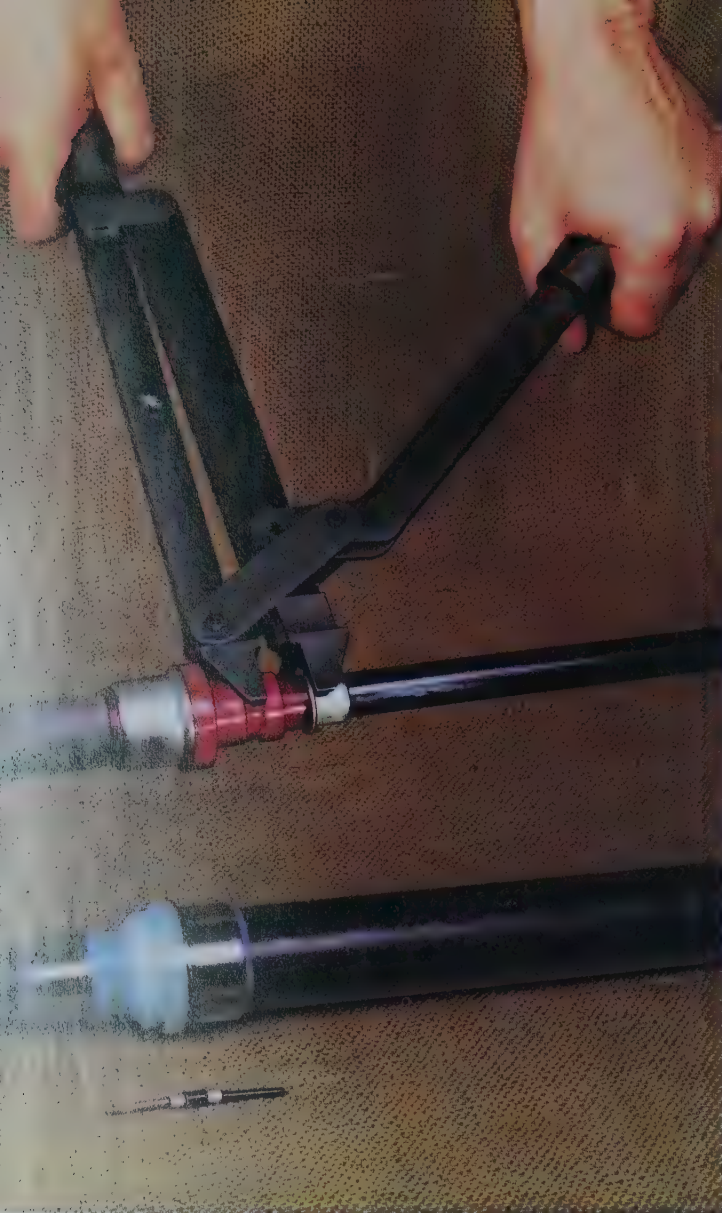
The coax connectors shown above use a newly developed technique in which a precious metal is plated over the plastic housing to provide a common ground for the shielding circuits. When feasible, it gives greater flexibility in joining coaxial cable to other types of circuitry. This new plating method is typical of the high-level production skills being evolved for the newer coaxial connection products—skills such as precision forming, turning and plating of metal and plastic parts, and their highly automated assembly. Also shown in the background is the latest version of a quick-latching connector for the external connections to computer equipment. Among the recent product developments are new types of Series “C” and Series “N” connectors, extension of the new “SMA”, “SMB”, and “SMC” families, and creation of a new line of CATV cable connectors. We continue to emphasize the solderless attachment approach. The new Series “N” connectors, for example, are the only fully crimpable connectors of this type to be fully qualified under an important military specification.

The telephone cable connector and application tool shown at right represent one approach to providing the telephone industry, both equipment makers and operating companies, with a new CA-type connection for small cable wiring in building or equipment installations. This development, one of a number, is part of our recent program of increased emphasis



on serving the telephone equipment industry by making them more aware of existing AMP products, as well as providing new products to meet their more specialized needs. The program supplements the successful PICABOND cable splice method launched in the mid-Sixties with the independent utilities and more recently, introduced to the Bell System. (Page 17 shows the PICABOND tool in use.)





**Mechanical connections for pipe up to the 1½" diameter size, shown above,** represent a very significant broadening of our AMP-FIT product family. The product started a few years ago with fittings for ⅛" (shown for contrast), ¼", and ⅜" copper, aluminum, and plastic tubing. These fittings, both large and small, are beginning to be used by gas utilities, as shown on page 17.

**The power utility cable connections shown above at right** are some of the 1969 developments that continue our penetration into this field which we first entered in the mid-Sixties. From left to right is a new cost-saving crimp and bolt approach for URD or underground residential distribution connections, the new 1192 CM size AMPACT tap (contrasted with the smallest), an internally fired cartridge-actuated AMPACT dead-end splice, a street light tap connection, and a copper AMPACT connector for corrosive environment applications.



**Alphanumeric light displays such as the ones shown below** are an entirely new venture for AMP. It is a logical outgrowth of our design work in AMPILLUME panel lights and in electrical/electronic connections, as well as our production experience in metalworking and plastic molding. With the growing use of various types of alphanumeric displays in electronic equipment, there appears to be a real need for miniaturized modular units such as these which feature brightness, long life, and easy installation and replacement.







### Programming Systems:

The AMP data input/output terminal units shown in the background above are offered to systems manufacturers as low-cost data collection devices. To handle the "static" information on a badge or credit card they utilize an AMP card reader or reader/imprinter. When variable data capability is also needed, unique AMP slide or rotary switch devices are incorporated into the terminal. These units are the latest outgrowth of our extensive work in card reader programming devices for credit validation, reservations, production control, dispensing, security, and similar systems.

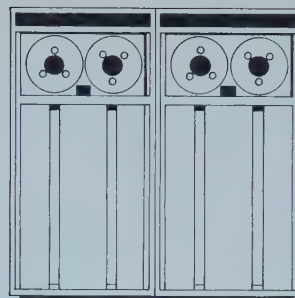
The matrix slide and rotary switches, shown in the foreground above, are also offered as a separate product line to serve as economical, yet very reliable, simple programming devices in such areas as test equipment, vending machines, process controls, and machine tools.

Application tooling developments include the Crimp Insert Machine shown below which is the first of its kind in the electrical connection industry. After the operator puts in a pre-stripped wire, the machine automatically applies a MATE-N-LOK contact and inserts it into a single circuit connector housing. This approach can be extended to other types of contacts and housings as well. With this machine a customer can eliminate either a hand insertion or a post-molding operation for substantial labor savings. This project, along with other machines developed recently, such as the Single End Leadmaking Machine (shown on page 15), a Hermetic Lead Machine, and machines for automated staking of contacts to printed circuit boards, reflect our increased emphasis on ECONOMATION or economical application tooling for customers.

The technological changes and growing need for electrical and electronic equipment should continue to present many opportunities to apply development, manufacturing, and marketing capabilities throughout the Seventies.







*Combined*

# AMP INCORPORATED &

	<i>December 31</i>	
<b>ASSETS</b>	<b>1969</b>	<b>1968</b>
<hr/>		
CURRENT ASSETS:		
Cash .....	\$ 5,500,000	\$ 3,664,000
Marketable securities, at cost, which approximates market . . .	18,272,000	15,634,000
Receivables .....	36,120,000	27,734,000
Inventories, at lower of cost, principally average, or market—		
Finished goods and work in process .....	21,434,000	15,962,000
Purchased and manufactured parts .....	16,463,000	13,503,000
Raw material .....	12,664,000	8,309,000
Total inventories .....	50,561,000	37,774,000
Prepaid expenses, etc. ....	3,383,000	2,331,000
Total current assets .....	113,836,000	87,137,000
<hr/>		
PROPERTY, PLANT AND EQUIPMENT, at cost:		
Land .....	3,673,000	3,300,000
Buildings and leasehold improvements .....	25,838,000	22,132,000
Machinery and equipment, etc. ....	45,541,000	38,027,000
Machines and tools with customers .....	20,441,000	17,322,000
	95,493,000	80,781,000
Less—Accumulated depreciation .....	42,114,000	34,695,000
Property, plant and equipment, net .....	53,379,000	46,086,000
<hr/>		
PATENTS, at a nominal value .....	1,000	1,000
	<u>\$167,216,000</u>	<u>\$133,224,000</u>

*The accompanying notes to the combined financial*



# Balance Sheets

## Subsidiaries and Pamcor, Inc.

LIABILITIES	December 31	
	1969	1968
<b>CURRENT LIABILITIES:</b>		
Current portion of long-term debt . . . . .	\$ 4,055,000	\$ 2,295,000
Foreign bank obligations . . . . .	4,722,000	4,000,000
Accounts payable . . . . .	12,232,000	9,053,000
Accrued expenses . . . . .	10,288,000	8,085,000
Accrued taxes on income (less U.S. Treasury tax anticipation bills of \$3,900,000 in 1968) . . . . .	16,716,000	7,314,000
Total current liabilities . . . . .	48,013,000	30,747,000
<b>LONG-TERM DEBT (Note 3) . . . . .</b>		
DEFERRED INCOME TAXES . . . . .	11,537,000	13,535,000
INVESTMENT TAX CREDIT AND DEFERRED INCOME . . . . .	1,233,000	1,315,000
	2,402,000	2,030,000
<b>SHAREHOLDERS' EQUITY:</b>		
AMP Incorporated—		
Common stock, without par value—		
Authorized 15,000,000 shares,		
issued 12,480,000 shares . . . . .	12,480,000	12,480,000
Pamcor, Inc.—		
Common stock, par value \$1.00 per share—		
Authorized 50,000 shares, issued 20,000 shares . . . . .	20,000	20,000
Retained earnings (Note 3) . . . . .	91,674,000	73,269,000
	104,174,000	85,769,000
Less—Treasury stock, at cost (Note 4) . . . . .	143,000	172,000
Total shareholders' equity . . . . .	104,031,000	85,597,000
	<u>\$167,216,000</u>	<u>\$133,224,000</u>

ements are an integral part of these balance sheets.



**COMBINED STATEMENTS OF INCOME  
AND RETAINED EARNINGS**

*AMP INCORPORATED & Subsidiaries and Pamcor, Inc.*

*For the Years Ended December 31*

	1969	1968
NET SALES .....	\$211,256,000	\$167,172,000
COST OF SALES .....	116,516,000	95,612,000
Gross income .....	94,740,000	71,560,000
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES .....	46,883,000	39,213,000
Income from operations (after deducting depreciation of \$9,452,000 in 1969 and \$8,497,000 in 1968) .....	47,857,000	32,347,000
OTHER DEDUCTIONS, Net .....	480,000	1,038,000
Income before income taxes .....	47,377,000	31,309,000
INCOME TAXES .....	23,097,000	15,082,000
NET INCOME .....	\$ 24,280,000	\$ 16,227,000
<i>Per Endorsed Share</i> (weighted average) .....	\$1.98	\$1.33

RETAINED EARNINGS, BEGINNING OF YEAR .....	\$ 73,269,000	\$ 61,376,000
ADD—Reversal of reserve for contingencies previously provided from retained earnings .....	—	553,000
	97,549,000	78,156,000
LESS—		
Cash dividends on common stock by:		
AMP Incorporated .....	5,508,000	3,421,000
Pamcor, Inc. ....	367,000	1,466,000
Total dividends (48¢ and 40¢ per Endorsed Share) .....	5,875,000	4,887,000
RETAINED EARNINGS, END OF YEAR (Note 3)	\$ 91,674,000	\$ 73,269,000

Net income reflects net income of Pamcor, Inc. of \$1,739,000 in 1969 and \$1,604,000 in 1968 after elimination of affiliated company profit in inventory.

*The accompanying notes to the combined financial statements are an integral part of these statements.*



*AMP INCORPORATED & Subsidiaries and Pamcor, Inc.*

- (1) **PRINCIPLES OF COMBINATION:** The financial statements of Pamcor have been combined with those of AMP and its subsidiaries (all wholly owned), since each company is owned beneficially by identical shareholders. Pamcor has no active subsidiaries and no affiliates other than AMP and its subsidiaries. By trust agreement, Bankers Trust Company holds all of the Pamcor common stock for the benefit of AMP common shareholders whose certificates are endorsed to show they are entitled to a proportionate interest in the Pamcor common stock held in the Trust. This interest is not transferable separately.

Intercompany and affiliated company accounts and transactions, including unrealized profits in inventory, were eliminated in consolidating and combining the financial statements of AMP, its subsidiaries and Pamcor.

- (2) **FOREIGN OPERATIONS:** As a result of including the accounts of all foreign operations, the combined financial statements as of December 31, 1969, include assets amounting to \$54,575,000 (\$41,439,000 current) and liabilities amounting to \$29,157,000 (\$24,951,000 current), or net assets of \$25,418,000. The additional net income, as a result of including these foreign operations, amounted to \$10,000,000 for the year 1969 and \$6,282,000 for the year 1968.

The accounts of the foreign operations have been translated to United States dollars at appropriate rates of exchange and there are no significant unrealized gains and losses thereon. The availability of remittances to the parent company is subject to the currency restrictions of the various countries. No provision has been made in consolidation for U. S. income taxes payable when dividends are received from foreign subsidiaries since AMP would receive a foreign tax credit which would substantially eliminate all U. S. income taxes on such dividends.

- (3) **LONG-TERM DEBT:** Long-term debt at December 31, 1969, represents a 5½% term loan of \$4,500,000 (including \$3,000,000 due within a year and classified as a current liability) payable to a bank, a 6½% note of \$8,000,000 (including \$1,000,000 due within a year and classified as a current liability) due to an institutional lender, a foreign 20-year annuity loan expiring in 1987 of \$1,441,000 at 6% interest, and other debt of three foreign subsidiaries totaling \$1,596,000.

Under the provisions of the 5½% term loan, AMP and its domestic subsidiaries will not incur other future borrowings in excess of \$25,000,000 without the prior consent of the lender.

The agreement covering the amount due to the institutional lender provides for the repayment in equal annual installments over 8 remaining years or, at the option of AMP, over 4 years without penalty. This agreement contains restrictions with respect to additional borrowings, maintenance of minimum working capital and certain other items. Payment of cash dividends and the purchase of the Company's common stock, etc., are limited to \$46,975,000 at December 31, 1969, plus the entire net income of AMP and its domestic subsidiaries and Pamcor, Inc. for subsequent periods.

- (4) **STOCK PLUS CASH BONUS PLAN AND TREASURY STOCK:** All of the Endorsed Shares held in the treasury (1969—228,231; 1968—254,282) are reserved for the payment of stock bonuses under the incentive Stock Plus Cash Bonus Plan adopted by the Board of Directors. The number of shares to be distributed is determined by the appreciation in the market value of the Company's stock. During the year ended December 31, 1969, treasury stock was increased through the purchase of 10,200 shares at \$445,000 and decreased through the distributions under the provisions of the Plan by 36,251 shares at a cost of \$474,000. For awards granted before and outstanding on December 31, 1969, and based on the market value as of that date, 186,300 shares would be distributed in the years 1970 through 1979.
- (5) **EMPLOYEE RETIREMENT PLANS:** The Companies' employee retirement plans include insured contributory plans, a trustee, non-contributory plan, and a single lump sum indemnity payment plan. During the two years ended December 31, 1969, provisions aggregating \$1,764,000 in 1969 and \$1,659,000 in 1968 were made to cover current service cost on all plans plus amortization of past service cost over 8 remaining years on one of the plans. The Companies' policy is to fund pension costs accrued. The cost of retirement benefits for past service has been fully funded except for this one plan which amounted to \$1,131,000 at December 31, 1969. The net assets of the plans exceeded the present value of vested benefits as of December 31, 1969.
- (6) **DEPRECIATION METHOD:** Depreciation is computed by applying principally the straight-line method to individual items in order to apportion the cost of the item evenly over its estimated useful life.

**AUDITORS' REPORT**

To the Shareholders and Boards of Directors,  
AMP Incorporated and Pamcor, Inc.:

We have examined the combined balance sheet of AMP INCORPORATED (a New Jersey corporation) and subsidiaries and PAMCOR, INC. (an affiliated Puerto Rican corporation) as of December 31, 1969, and the related combined statements of income and retained earnings for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. Financial statements of the foreign subsidiaries were examined by other auditors and we were furnished with their reports on such financial statements. We have previously examined and reported on the financial statements for the preceding year.

In our opinion, based upon our examination and the reports of other auditors referred to above, the accompanying combined balance sheet and combined statements of income and retained earnings present fairly the combined financial position of AMP Incorporated and subsidiaries and Pamcor, Inc. as of December 31, 1969, and the results of their combined operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Philadelphia, Pennsylvania  
February 11, 1970

*Arthur Andersen & Co.*



## OFFICERS

U. A. WHITAKER

*Chairman of the Board*

G. A. INGALLS

*Vice Chairman of the Board*

S. S. AUCHINCLOSS

*President and Chief Executive Officer*

J. D. BRENNER

*Vice President, Manufacturing*

C. J. FREDRICKSEN

*Vice President and Chief Financial Officer*

F. S. KUGLE

*Vice President, Administration*

WILLIAM C. LANGE

*Vice President, Director of Merchandising*

S. WILSON POLLOCK

*Vice President, Engineering and Research*

WALTER F. RAAB

*Treasurer*

CLYDE RAYBURN

*Controller*

SOLON L. RHODE, JR.

*Secretary, General Legal Counsel*

## DIVISIONAL VICE PRESIDENTS

*(of AMP Incorporated only):*

JOHN E. EBERLE

*Connector and Component Products*

GERALD F. ENGLEHART

*International*

HERMAN C. HAAS

*Domestic Subsidiaries*

FRANKLIN E. HOWELL

*Industrial Sales*

KENNETH L. NELJSTROM

*General Products*

WILLARD A. SMITH

*European Operations*

# AMP INCORPORATED

HARRISBURG, PA.

**Pamcor, Inc.**

SAN JUAN, P. R.

## BOARD OF DIRECTORS

\*S. S. AUCHINCLOSS

*President and Chief Executive Officer*

F. H. BOLAND

*Industrial Consultant*

*(Retired Vice President,  
Manufacturing and Engineering,  
ACF Industries, Incorporated)*

R. M. BRUMFIELD

*Chairman*

*Potter & Brumfield Division,  
American Machine & Foundry  
Company*

\*C. J. FREDRICKSEN

*Vice President and Chief Financial Officer*

F. C. HIXON

*President*

*Midland Investment Company*

\*G. A. INGALLS

*Vice Chairman of the Board*

C. L. KEISTER

*Member of the Board*

*and Retired Chairman*

*Dauphin Deposit Trust Company*

J. T. SIMPSON

*Chairman of the Board*

*Harsco Corporation*

\*U. A. WHITAKER

*Chairman of the Board*

*\*Member of Executive Committee of  
the Board of Directors*

## THE ANNUAL SHAREHOLDERS' MEETINGS

The annual shareholders' meetings of AMP Incorporated and Pamcor, Inc. are held the fourth Thursday of April. Formal notices, proxy statements and forms of proxy will be mailed on or about March 20, 1970 to shareholders of record on March 6, 1970 as to the April 23, 1970 meetings at 2:00 P.M. at 15 Exchange Place, Jersey City, New Jersey.

## TRANSFER AGENTS

Bankers Trust Company  
16 Wall Street  
New York, N.Y. 10015

The Corporation Trust Company  
15 Exchange Place  
Jersey City, N.J. 07102

## REGISTRAR

Morgan Guaranty Trust Company  
of New York  
30 West Broadway  
New York, N.Y. 10015

## STOCK

LISTED: New York Stock Exchange  
SHAREHOLDERS: 6,821

## AUDITORS

DOMESTIC: Arthur Andersen & Co.  
INTERNATIONAL: Price Waterhouse & Co.





AMP Headquarters—Eisenhower Blvd., Harrisburg, Pa.

## SUBSIDIARIES

(all wholly owned and included in combined results)

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American Pamcor, Inc.  
Valley Forge, Pa.

AMP of Canada Ltd.  
Toronto, Canada

AMP de Mexico, S.A.  
Mexico City, D.F. Mexico

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AMP de France  
Paris, France

AMP-Holland N.V.  
's-Hertogenbosch, Holland

AMP of Great Britain Limited,  
London, England

AMP Italia S.p.A.,  
Turin, Italy

Deutsche AMP G.m.b.H.,  
Frankfurt, Germany

AMP Española, S.A.,  
Barcelona, Spain

Svenska AMP A B  
Stockholm, Sweden

AMP (Japan), Ltd.,  
Tokyo, Japan

Australian AMP Pty. Limited  
Sydney, Australia

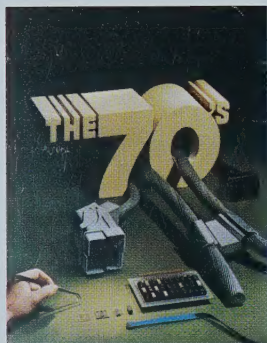
## AMP'S POSITION IN U.S. INDUSTRY

Growing entirely through new products and markets without benefit of acquisitions, AMP has in recent years entered the ranks of major U.S. corporations. The latest standings from the reports of two widely-read financial publications are:

(Based on 1968 and 1969 results as shown in the 1969 issue of *Fortune* "500" and *Forbes* "22nd Annual Report" issue.)

Sales . . . . .	440th
Net Income . . . . .	264th
Net Income (as % of Sales) . . . . .	51st
Earnings Per Share Growth Rate:	
1958-1968 . . . . .	47th
1964-1969 . . . . .	29th
Return on Equity . . . . .	26th
Return on Total Capital . . . . .	12th





**The Seventies for AMP** will be shaped by our customers' diverse connection requirements. During the Sixties, AMP's unparalleled range of connection devices and application tooling found use in virtually every type of electrical and electronic equipment. As we enter another

decade, AMP products are appearing in the very latest customer designs. The examples shown here are: ① System 3 Computer (IBM); ② Picturephone (Bell Laboratories); ③ Trash Masher (Whirlpool); ④ STOL Aircraft (LTV); ⑤ Electronic Video Recorder (Motorola); ⑥ Industrial Robot (Unimation); ⑦ and Rapid Transit (San Francisco)

